

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003288**Date Inspected:** 14-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Hu Wei Qing and Lvliqing**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and SAS Tower Fabrication**Summary of Items Observed:**

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on sub-assembly Bays mentioned below;

Bay 7: OBG - Floor Beam Sub Assembly

This QA observed ZPMC welder Hu Yacheng ID #049339, SMAW(1G) welding repair on flanges due to notches of various sizes and depths noted on longitudinal shear plates marked LD2A-X75F per welding repair report B-WR483 using TL-508 electrode.

SMAW tack welding was also noted on flange to web plate of floor beam FB028-002-092/093 and FB027-002-126/128 and longitudinal shear plate LD004-018-011/012 using 4.0 mm diameters, TL-508 electrode. SMAW(2F/3F) fillet welding on 8.0mm thick plate end cap to 300mm x 300mm hollow steel diagonal brace for various beam FB006-054-003, FB006-054-001, FB006-053-003/001, and FB006-052-003/001 using 3.2mm diameter TL-508 electrode. This QA observed ZPMC welder Yang Gencheng ID #066418 doing the task and ZPMC CWI Inspector Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS).

This QA perform 10%MT on the fillet welds of various OBG longitudinal diaphragm LD015-014-005~008, LD015-016-001~004, LD018-0060001~004, LD017-006-005~008, LD016-013-001~004, LD016-012-005~008,

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LD016-011-001~004, LD016-016-001~004, LD016-015-005~008, LD016-014-005~008, LD015-015-005~008, LD015-011-001~004, LD015-012-005~008 and LD015-013-001~004.

This QA also perform 10% MT on the CJP/fillet welds of OBG floor beam FB011-009 weld joints 004, 010, 013, 014, 022, 023, 027~032, 035~040, 043, 044, 047, 048 and 061.

FCAW fillet welding (2F) was observed on stiffener to web plate on floor beam sub-assembly FB029-002 weld joints 104/105 and FB020-001 weld joints 040/041. ZPMC welders working on these were identified as Cheng Chuanzong ID# 044804 and Hong Shuili ID #044815. ZPMC CWI Hu Wei Qing was noted monitoring the parameters.

Bay 8: Tower Diaphragm

This QA Inspector randomly observed three ZPMC welder Jiang Yong Sheng ID number 045240, Chen Chao Nian ID #048688 and Yan Shitian ID # 062708 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill pass on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly ESD1-SA348-9A, WSD1-SA32 A/B-5B and ESD1-SA316-4B respectively. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters.

This QA observed fit-up of fillet weld connection between tower diaphragm plate to diaphragm flange ESD1-SA226-2. Initial root gap measured all around flange was 6.5mm, paint coating removed on weld surface area and preheated to >160 degree C prior tack welding with 4.0mm THJ506Fe-1 electrode and following procedure WPS-B-T-4122-4 by ZPMC welder Fan Dian Yi ID #051324 and Chen Jin Nian ID #043148. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters.

Heat straightening was observed on tower diaphragm flange NSD1-SA334 A/B weld joints 3A/B, 5A/B, 6A/B, 10A/B, and 12A/B due to welding distortion. Natural gas was used with thermal heat input of less than 650 degree C and with the aid of 50-Ton hydraulic Ram following procedure HSR1(T)-2707. This QA also observed bending of heavy plates marked P654(W)-7/10(G) and P654(E)-7/10(E) intended for tower diaphragm flange. Oxy-acetylene gas was used with thermal heat input of less than 650 degree C and with the aid of 50-Ton hydraulic Ram following procedure HSR1(T)-2688 and HSR1(T)-2682 respectively.

Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Ady Velasco, (858) 344-8746, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo, Joselito	Quality Assurance Inspector
Reviewed By:	Cochran, Jim	QA Reviewer
